Chapter Two

Aviation Demand Forecasts

Hollister Municipal Airport

Facility planning must begin with a definition of the demand that may reasonably be expected to occur at the facility over a specific period of time. For Hollister Municipal Airport, this involves forecasts of aviation activity through the year 2025. In this master plan, forecasts of based aircraft, the based aircraft fleet mix, and annual aircraft operations will serve as the basis for facility planning.

Air transportation is a unique industry that has experienced wide fluctuations in growth and recession. For this reason, it is important that from time-to-time an airport evaluate its current position and examine future demand trends and potential. This holds especially true today given limited public funding mechanisms.

The primary objective of this planning effort is to define the magnitude of change that can be expected over time. Because of the cyclical nature of the economy, it is virtually impossible to predict, with certainty, year-to-year fluctuations in activity when looking as far as 20 years into the future. However, a trend can be established which delineates long term growth potential. While a single line is often used to express the anticipated growth, it is important to remember that actual growth may fluctuate above and below this line. The point to remember about forecasts is that they serve only as guidelines, and planning must remain flexible to respond to unforeseen facility needs. This is because aviation activity is affected by many external influences, as well as by the

HOLLISTER

types of aircraft used and the nature of available facilities.

Recognizing this, the master plan for Hollister Municipal Airport will be demand-based rather than time-based. As a result, the reasonable levels of activity potential that are derived from this forecasting effort will be related to the planning horizon levels rather than dates in time. These planning horizons will be established as levels of activity that will call for consideration of the implementation of the next step in the master plan program. This will be further described in subsequent chapters of this master plan.

Although publicly-owned and operated, an airport is, in many ways, very similar to the private business environment. Airports provide much needed services to the community and have to recognize their position and establish well-planned goals in order to better serve the community. Marketing efforts and facility development are matched to goals so that the airport can best serve the community.

In order to fully assess current and future aviation demand for Hollister Municipal Airport, an examination of several key factors is needed. These include: national and regional aviation trends, historical and forecast socio-economic and demographic information of the area, competing transportation modes, and facilities. Consideration and analysis of these factors will ensure a comprehensive outlook for future aviation demand at Hollister Municipal Airport.

These are the first planning forecasts to be prepared for Hollister Municipal Airport subsequent to the events of September 11, 2001. Following the events of September 11, 2001, the already sluggish economy stalled. A slow recovery with small (but measurable) gains was experienced in 2002, growing by more than 1.4 percent in the 4th quarter of 2002 alone. While the commercial airline industry experienced overall decreases in passenger traffic and revenues in 2002, many general aviation businesses experienced growth. For example, charter operators and fractional ownership companies were experiencing increases as the result of the commercial airline travel difficulties and delays. Corporate aircraft ownership increased.

There is no comparative period in recent history to draw conclusions or trends to gauge the full effects of the events of September 11th. In 1991, the commercial airlines experienced a decline in passengers and profits due to the Persian Gulf War and simultaneous economic recession. However, general aviation was already in an extended period of decline due to product liability concerns and was not specifically affected by the war or economic recession. The industry did not begin to recover until 1994 with the passage of the *General Aviation Revitalization Act*. Commercial airline traffic experienced a decline only in 1991, growing each subsequent year through 2000.

The total impacts the events of September 11, 2001 will have on commercial and general aviation can only be

determined over time. Commercial air service has recovered and grown in many parts of the country since September 11th. This signals the beginning of the recovery from September 11th for the industry. Many of the economic problems for the commercial airlines are now most likely being affected by the larger air carrier business models and cost structures, current economic climate, international political events such as the war on terrorism, health concerns, and events in Iraq. These events, combined with the lasting financial impacts of September 11th, have caused many airlines to cease operation and/or seek bankruptcy protection. Large commercial airline recovery will be a factor of the ability of the air carriers to refine their business models to meet the current economic conditions and air traveler price requirements, continued air traveler confidence in new security measures, and the recovery of the U.S. economy. General aviation recovery will be dependent upon the economy, corporate profitability, fuel prices, and the type and extent of any new regulatory controls over flight training and operations.

The demand-based manner in which this master plan is being prepared is intended to accommodate variations in demand at the airport. Demand-based planning relates capital improvements to demand factors, such as based aircraft, instead of points in time. This allows the airport to address capital improvement needs according to the actual demand occurring at the airport. For example, should based aircraft growth slow or decline, it may not be necessary to implement some improvement projects. However, should the airport experience accelerated growth in based aircraft, the plan will be flexible enough to respond accordingly.

NATIONAL AVIATION TRENDS

Each year, the Federal Aviation Administration (FAA) publishes its national aviation forecast. Included in this publication are forecasts for air carriers, regional/commuters, general aviation, and FAA workload measures. The forecasts are prepared to meet budget and planning needs of the constituent units of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and by the general public.

The current edition when this chapter was prepared was FAA *Aerospace Forecasts-Fiscal Years 2003-2014*, published in March 2003. The forecasts use the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets.

The FAA expects modest recovery in 2003, although profitability for much of the commercial airline industry is expected to remain elusive. Positive growth is expected in 2004 and full recovery to pre-September 11th levels is not expected to be achieved until 2005. While the majority of this decline was forecast to occur with the large air carriers, the regional airline industry was expected to continue to grow. Air

cargo traffic was expected to grow faster than passenger traffic. General aviation is expected to achieve low-to-moderate increases in the active fleet and hours flown, with most of the growth occurring in business/corporate flying.

On February 5, 2002, the FAA published a notice of proposed rulemaking (NPRM), titled *Certification of Aircraft and Airmen for the Operation of Light-Sport Aircraft*. The rulemaking would establish new light-sport aircraft categories and allow aircraft manufacturers to build and sell completed aircraft without obtaining type and production certificates. Instead, aircraft manufacturers would build to industry consensus standards. This reduces development costs and subsequent aircraft acquisition costs. This new category places specific conditions on the design of the aircraft to limit them to low performance aircraft. New pilot training times are reduced and offer more flexibility in the type of aircraft which the pilot would be allowed to operate. Viewed by many within the general aviation industry as a revolutionary change in the regulation of recreational aircraft, this new rulemaking is anticipated to significantly increase access to general aviation by reducing the time and costs to earn a pilot's license and owning and operating an aircraft. These regulations are aimed primarily at the recreational aircraft owner/operator. This new rulemaking is expected to add between 300 and 500 new aircraft each year beginning in 2005. By 2014, there is expected to be 6,200 of these aircraft in the national fleet.

GENERAL AVIATION TRENDS

Following more than a decade of decline, the general aviation industry was revitalized with the passage of the *General Aviation Revitalization Act* in 1994, which limited the liability on general aviation aircraft to 18 years from the date of manufacture. This legislation sparked an interest to renew the manufacturing of general aviation aircraft, due to the reduction in product liability, as well as renewed optimism for the industry. The high cost of product liability insurance was a major factor in the decision by many American aircraft manufacturers to slow or discontinue the production of general aviation aircraft. The industry responded as expected. According to the General Aviation Manufacturers Association (GAMA), between 1994 and 2000, general aviation aircraft shipments increased at an average annual rate over 20 percent, increasing from 928 shipments in 1994 to 2,816 shipments in 2000.

However, the growth in the general aviation industry slowed considerably in 2001, negatively impacted by the economic downturn already taking place in 2001. In 2001, aircraft shipments were down 6.6 percent to 2,634. The 2002 shipments were down an additional 15.9 percent to 2,214 with piston-engine aircraft shipments down 12 percent, turboprop shipments down 33.5 percent, and business jet shipments down 12.7 percent.

According to GAMA, in 2001 business aircraft production (turboprop and turbojets) represented 46 percent of

total production, with business jets constituting nearly 30 percent of the total. For 2002, business aircraft production represented 32 percent of total production with business jets representing 32 percent of the shipments, while turboprops had fallen to eight percent.

The decline in aircraft shipments is not expected to last long. According to the National Business Aviation Association (NBAA), there are more than 2,700 aircraft still on order. NBAA cites a study by Honeywell that aircraft shipments will recover to record levels by 2004 and that 8,400 business aircraft will be delivered over the next 10 years.

At the end of 2002, the total pilot population, including student, private, commercial, and airline transport, was estimated at 661,358. This is an increase of 4,000 pilots over 2001, which saw a 3.9 percent increase, or 24,000 pilots, over 2000. Student pilots were down 8.9 percent in 2002. This follows a 3.3 percent decrease in 2001 from 2000. Pilot training is suffering from limitations on foreign training and visa issues since September 11th. The number of student pilots is projected to increase by 1.0 percent in 2003, 2.0 percent in 2004, 3.5 percent in 2005, and 2.8 percent in 2006. Thereafter, it is expected to grow at 2.0 percent annually. The strong growth in 2005 and 2006 is expected to be the result of the new Sport Aircraft regulations.

While impacting aircraft production and delivery, the events of September 11th and economic downturn have not had the same negative impact on the business/corporate side of general aviation. The increased security measures placed on commercial flights has increased interest in fractional and corporate aircraft ownership, as well as on-demand charter flights. According to GAMA, the total number of corporate operators increased by 482 operators in 2002. Corporate operators are defined as those companies that have their own flight departments and utilize general aviation airplanes to enhance productivity. **Table 2A** summarizes the number of U.S. companies operating fixed-wing turbine aircraft since 1991.

TABLE 2A
U.S. Companies Operating Fixed-Wing Turbine Business Aircraft And Number Of Aircraft, 1991-2002

Year	Number of Operators	Number of Aircraft
1991	6,584	9,504
1992	6,492	9,504
1993	6,747	9,594
1994	6,869	10,044
1995	7,126	10,321
1996	7,406	11,285
1997	7,805	11,774
1998	8,236	12,425
1999	8,778	13,148
2000	9,317	14,079
2001	9,709	14,837
2002	10,191	15,569

Source: NBAA

The growth in corporate operators comes at a time when fractional aircraft programs are experiencing significant growth. Fractional ownership programs sell 1/8 or greater shares in an aircraft at a fixed cost. This cost, plus monthly maintenance fees, allows the shareholder a set number of hours of use per year and provides for the management and pilot services associ-

ated with the aircraft's operation. These programs guarantee the aircraft is available at any time, with short notice times. Fractional ownership programs offer the shareholder a more efficient use of time (when compared with commercial air service) by providing faster point-to-point travel times and the ability to conduct business confidentially while flying. The lower initial startup costs (when compared with acquiring and establishing a flight department) and easier exiting options are also great benefits.

Since beginning in 1986, fractional jet programs have flourished. **Table 2B** summarizes the growth in fractional shares since 1986. The NBAA reports that there were 776 aircraft in fractional jet programs at the end of 2002. There were 696 aircraft used in 2001. GAMA reports that 15 percent of all turbine aircraft deliveries are for fractional programs.

Manufacturer and industry programs and initiatives continue to revitalize the general aviation industry with a variety of programs. For example, Piper Aircraft Company has the Piper Financial Services (PFS) to offer competitive interest rates and/or leasing of Piper aircraft. Manufacturer and industry programs include the "No Plane, No Gain" program promoted jointly by the General Aviation Manufacturers Association (GAMA) and the National Business Aircraft Association (NBAA). This program was designed to promote the use of general aviation aircraft as an essential, cost-effective tool for businesses. Other programs are intended to promote growth in new pilot starts and to introduce people to general aviation. These include "Project Pilot" sponsored by the Aircraft Owners and Pilots Association (AOPA), "Flying Start" sponsored by the Experimental Aircraft Association (EAA), "Be a Pilot" jointly sponsored and supported by more than 100 industry organizations, and "Av Kids" sponsored by the NBAA. Over the years, programs such as these have played an important role in the success of general aviation and will continue to be vital to its growth in the future.

TABLE 2B
Fractional Shares
1986-2002

Year	Number of Shares
1986	3
1987	5
1988	26
1989	51
1990	57
1991	71
1992	84
1993	110
1994	158
1995	285
1996	548
1997	957
1998	1,551
1999	2,607
2000	3,834
2001	4,871
2002	5,827

Source: NBAA

In 2001, there was an estimated 211,447 active general aviation aircraft, representing a 2.8 percent decrease from the previous year, the second consecutive year after five years of growth. **Exhibit 2A** depicts the FAA forecast for active general aviation aircraft in the United States. The FAA forecasts general aviation air-

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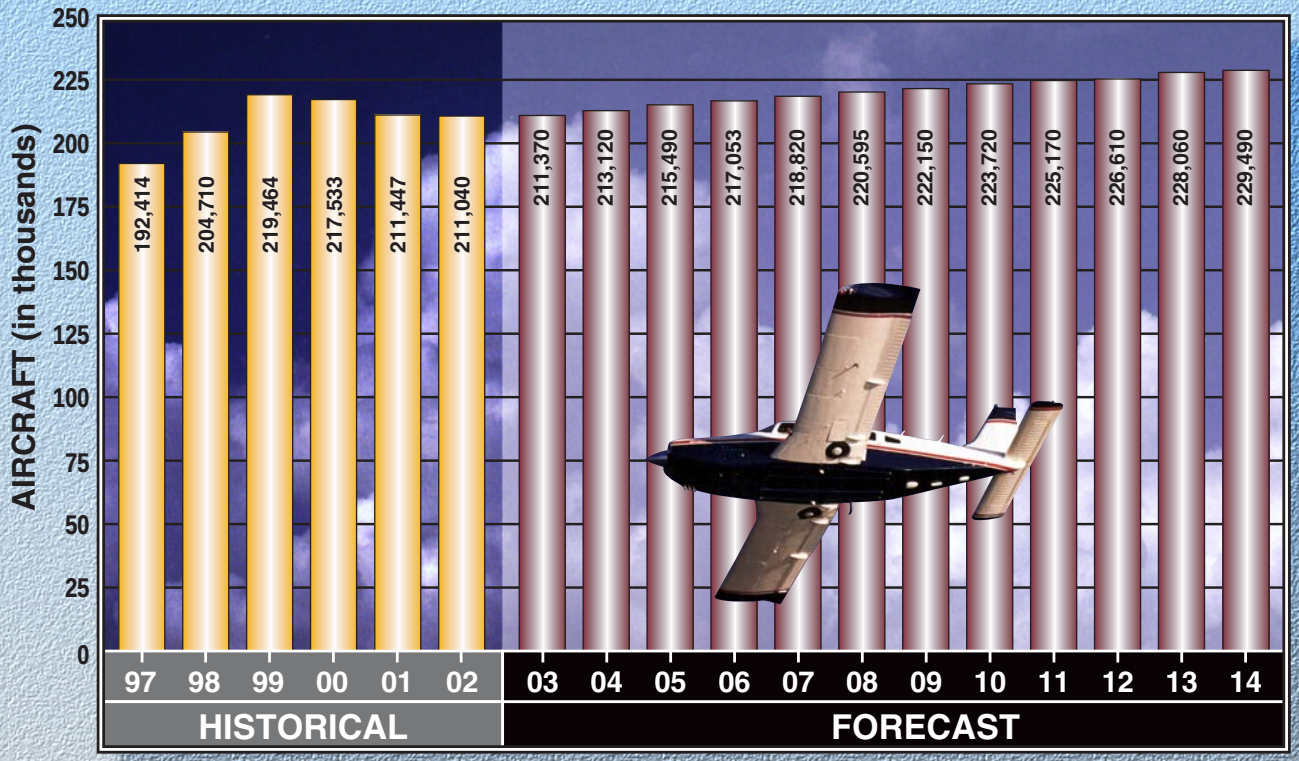
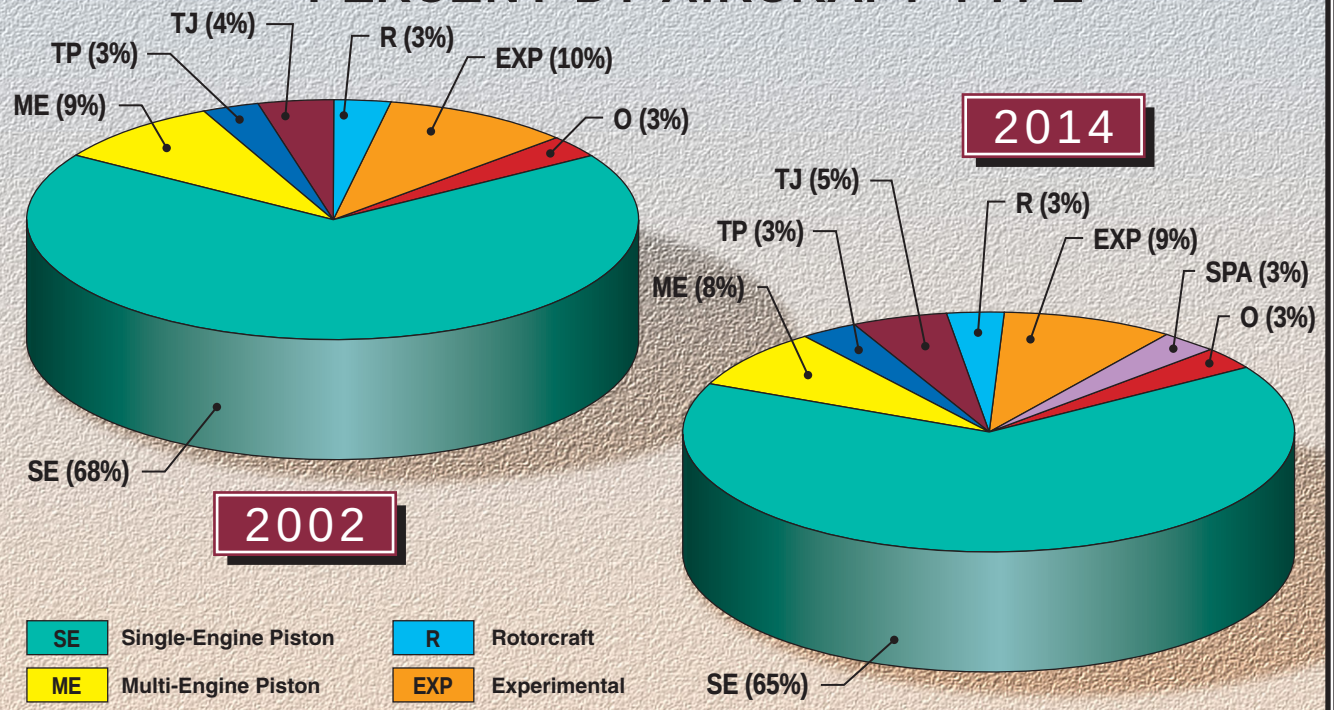
ACTIVE GENERAL AVIATION AIRCRAFT



Source: FAA Aerospace Forecasts, FY 2003-2014

PERCENT BY AIRCRAFT TYPE



Hollister Municipal Airport

Exhibit 2A
U.S. ACTIVE GENERAL AVIATION AIRCRAFT FORECASTS

craft to increase at an average annual rate of 0.7 percent over the 13-year forecast period. Single-engine piston aircraft are expected to grow by only 0.2 percent over the planning period. Multi-engine piston aircraft are expected to decline by 0.2 percent throughout the forecast period. Helicopters are projected to grow at 0.7 percent annually, while experimental aircraft and gliders are expected to grow at 0.4 percent and 0.2 percent annually, respectively.

By far, the strongest growth is expected in turbine-powered aircraft. Turbine-powered aircraft are expected to grow at an average annual rate of 2.5 percent over the forecast period, with turboprop aircraft growing at 1.5 percent annually and turbojet aircraft growing at an annual average growth rate of 3.6 percent. This strong growth rate for turbojet aircraft can be attributed to the growth in the fractional ownership industry and corporate aircraft ownership, new product offerings (which include new entry level aircraft and long-range global jets), and a shift away from commercial travel by many travelers and corporations.

The development of small, inexpensive business jets is not factored into national forecasting at this time. This developing industry is marked by the Eclipse Jet, although there are about four other airframes in development.

This six-seat, single-pilot aircraft could revolutionize the industry with it's less than one million dollar price and low operating cost projected at $0.51 per mile. Should this aircraft reach production at the specified costs, it would have the ability to revolutionize business and personal travel, making the air taxi business possible. However, much still needs to be done to have this aircraft come to fruition; most importantly is the engine. Eclipse Aviation has discontinued its agreement with Williams, the original engine manufacturer and is actively pursuing new engine options. The key to the low acquisition and operational costs lies with the engine. Should the Eclipse or similar aircraft come to fruition, more than 5,000 new jet aircraft could be added to the national fleet by 2014.

COMPARATIVE FORECASTS

Forecasts of future aviation activity at Hollister Municipal Airport have been prepared by the FAA and the California Department of Transportation (CALTRANS) Aeronautics Division. The forecasts prepared by CALTRANS are included in the 1999 California Aviation System Plan (CASP). Using 1995 base year data, the CASP projected based aircraft and annual aircraft operations for Hollister Municipal Airport through 2025. As shown in **Table 2C**, CALTRANS projected based aircraft to grow by 132 aircraft to 274 in 2020. Annual operations were projected to grow from 51,500 in 1995 to 99,373 in 2020. CALTRANS projected based aircraft and annual operations to grow at 2.7 percent annually.

TABLE 2C
1999 CALTRANS California Aviation System Plan
Forecasts For Hollister Municipal Airport

	1995	2005	2010	2015	2020
Based Aircraft	142	201	227	250	274
Annual Operations	51,500	72,898	82,327	90,669	99,373

Source: 1999 CASP

The FAA provides forecasts for based aircraft and annual operations for Hollister Municipal Airport within their *Terminal Area Forecasts* (TAF) document. The TAF is updated annually by the FAA based upon current trends and typically updated when new planning forecasts are prepared for master plan studies.

The current FAA TAF forecasts for Hollister Municipal Airport are summarized in **Table 2D**. While these projections are developed for each year through 2015, only the five-year incremental projection is included in the table. The TAF projects static operational and based aircraft levels for the airport through 2015. Based aircraft and operational levels are also underestimated in these forecasts. In 2002, there were 57,300 operations and 195 based aircraft at Hollister Municipal Airport.

TABLE 2D
FAA Terminal Area Forecast

	2000	2005	2010	2015
Based Aircraft	145	145	145	145
Annual Operations	53,000	53,000	53,000	53,000

Source: FAA TAF

FORECASTING APPROACH

The development of aviation forecasts proceeds through both analytical and judgmental processes. A series of mathematical relationships are tested to establish logic and rationale for projected growth. However, the judgment of the forecast analyst, based upon professional experience, knowledge of the aviation industry, and assessment of the local situation, is important in the final determination of the preferred forecast.

The most reliable approach to estimating aviation demand is through the utilization of more than one analytical technique. Methodologies frequently considered include trend line/time-series projections, correlation/regression analysis, and market share analysis.

Trend line/time-series projections are probably the simplest and most famil-

iar of the forecasting techniques. By fitting growth curves to historical data, then extending them into the future, a basic trend line projection is produced. A basic assumption of this technique is that outside factors will continue to affect aviation demand in much the same manner as in the past. As broad as this assumption may be, the trend line projection does serve as a reliable benchmark for comparing other projections.

Correlation analysis provides a measure of direct relationship between two separate sets of historical data. Should there be a reasonable correlation between the data sets, further evaluation using regression analysis may be employed.

Regression analysis measures statistical relationships between dependent and independent variables yielding a "correlation coefficient." The correlation coefficient (Pearson's "r") measures association between the change in a dependent variable and the independent variable(s). If the "r-squared" value (coefficient determination) is greater than 0.95, it indicates good predictive reliability. A value less than 0.95 may be used, but with the understanding that the predictive reliability is lower.

Market share analysis involves a historical review of the airport activity as a percentage, or share, of a larger regional, state, or national aviation market. A historical aviation market share trend is determined providing an expected market share for the future. These shares are then multiplied by the forecasts of the larger geographical area to produce a market share projection. This method has the same limitations as trend line projections, but can provide a useful check on the validity of other forecasting techniques.

It is important to note that one should not assume a high level of confidence in forecasts that extend beyond five years. Facility and financial planning usually require at least a 10-year preview, since it often takes more than five years to complete a major facility development program. However, it is important to use forecasts which do not overestimate revenue-generating capabilities or understate demand for facilities needed to meet public (user) needs.

AIRPORT SERVICE AREA

The airport service area is an area where there is a potential market for airport services. Access to general aviation airports, commercial air service, and transportation networks are important determinates in the size of the airport service area. The proximity of other airports and the facilities and services they provide to general aviation are important considerations as well. It should be noted that aviation demand does not necessarily conform to political or geographical boundaries.

The local airport service area is defined by the proximity of other airports and the facilities that they are able to provide to general aviation aircraft. General aviation service areas are very closely defined as the result of nearby airports providing similar

aircraft tie-down, fuel, and hangar services.

Chapter One detailed the public-use airports within a 30 nautical mile radius of Hollister Municipal Airport. These airports provide a wide range of tie-down, fuel, hangar, and general aviation services. From a physical facility and capability viewpoint, Hollister Municipal Airport can serve a larger portion of general aviation, most importantly business and corporate aviation, than many of the airports. Frazier Lake Airport, South County Airport, Marana Municipal Airport, and Los Banos Municipal Airport all have runways less than 3,100 feet in length. These runways are not capable of serving many of the business and corporate aircraft. Salinas Municipal Airport and Monterey Peninsula Airport have runways in excess of 6,000 feet, suitable for most business and corporate aircraft. These airports are well-positioned to serve the Monterey Bay area and most likely limit the Hollister Municipal Airport service area to the west. However, it can be expected that the Hollister Municipal Airport service area extends over the other airports to the north and east as the services and facilities at Hollister exceed those available at those airport.

A review of aircraft ownership for based aircraft at Hollister Municipal Airport was made to gain an understanding of the existing service area for based aircraft demand and, in particular, determine if the airport serves demand from the San Francisco Bay area. Using aircraft records provided by the City and airport tenants, it was determined that the majority of based aircraft are owned by residents of the City of Hollister as shown on **Exhibit 2B**. However, the airport draws a number of aircraft from the Bay area. Interestingly, Hollister Municipal Airport draws few aircraft from the Monterey Bay area to the west, even though it is located in closer proximity to Hollister. This is due most likely to the capabilities of the Salinas Municipal Airport and Monterey Peninsula Airport.

Exhibit 2B depicts the zip codes of based aircraft ownership at Hollister Municipal Airport. This exhibit details that the airport is drawing aircraft from owners in the San Jose area, San Mateo County, and even San Francisco. It is most notable that the airport draws from this large of a service area, considering that there are a number of general aviation airports located in closer proximity to Bay area aircraft owners than Hollister Municipal Airport. Most notably, Reid-Hillview Airport, San Carlos Airport, Half Moon Bay Airport, and Hayward Executive Airport, which are located in the Bay area. This underlines the capacity constraints experienced in the Bay area for hangar and tie-down space.

The 2003 *Regional Airport System Plan* (RASP) prepared for the Association of Bay Area Governments (ABAG) noted that the shortage of hangar space is a key issue for general aviation in the Bay area. Aircraft owners are looking for affordable and available areas to base their aircraft and are moving to airports further away from their homes or businesses to find them. This is a trend that will most

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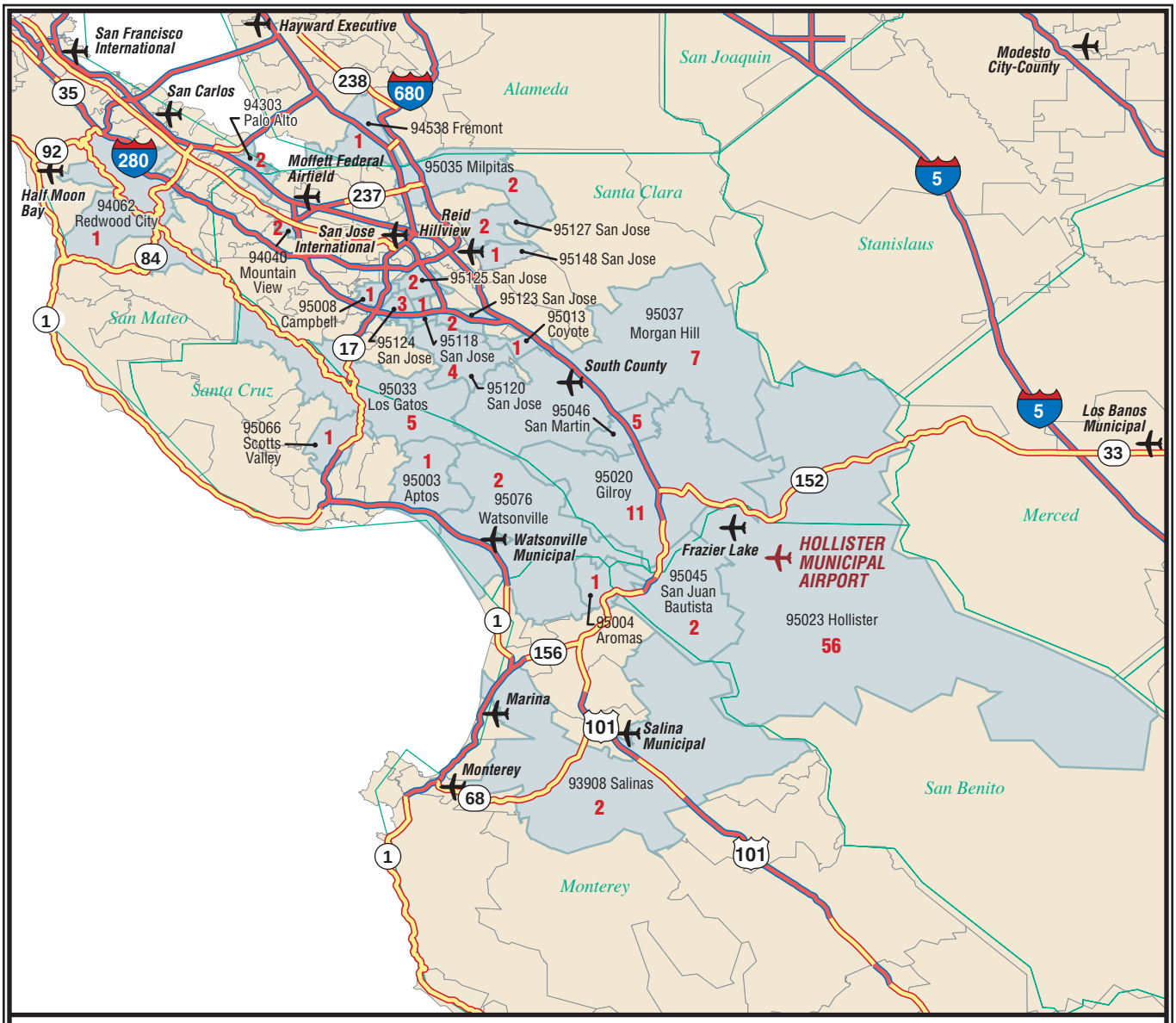

LEGEND

	ZIP Code Area
5	Number of Based Aircraft
	County Line
	Airport

Hollister Municipal Airport

Exhibit 2B
BASED AIRCRAFT BY ZIP CODE

likely benefit Hollister Municipal Airport through the planning period.

AVIATION ACTIVITY FORECASTS

To determine the types and sizes of facilities that should be planned to accommodate general aviation activity, certain elements of that activity must be forecasted. Indicators of general aviation demand include:

- Based Aircraft
- Based Aircraft Fleet Mix
- Annual Operations
- Peak Activity

The remainder of this chapter will examine historical trends with regard to these areas of general aviation activity and project future demand for these segments of general aviation activity at the airport.

BASED AIRCRAFT FORECASTS

The number of based aircraft is the most basic indicator of general aviation demand at an airport. By first developing a forecast of based aircraft, the growth of other factors can be projected. **Table 2E** summarizes based aircraft at Hollister Municipal Airport for 1990, 1995, and 2002, the years reliable records were available from the FAA and airport. The 2002 total was based on an actual aircraft count completed by airport management. As shown in the table, based aircraft totals have grown in the past 12 years, increasing by 62 aircraft. This equates to an average annual growth rate of 3.2 percent.

The first step in developing forecasts of based aircraft typically involves the use of time-series and regression analyses. However, due to the limited annual based aircraft records, any time-series or regression analyses would have not had sufficient comparative data to yield reliable correlation coefficients considered accurate enough for planning purposes. Therefore, these analytic techniques were discarded in favor of market share analyses, which compare historical based aircraft totals to U.S. active aircraft and the local population to gain an understanding of future growth potential.

Table 2E compares historical based aircraft at Hollister Municipal Airport and historical U.S. active aircraft. As shown in the table, the percentage of U.S. active general aviation aircraft based at Hollister Municipal Airport increased from 0.07 percent in 1990 to 0.09 percent in 2002.

To gain an understanding of future based aircraft at Hollister Municipal Airport considering growth projected nationally, two market share forecasts (a constant share of U.S. active aircraft forecast and an increasing share U.S. active aircraft forecast) have been prepared. The constant share forecast assumes that based aircraft will continue to grow at the same rate as U.S. active aircraft and applies the 2002 Hollister Municipal Airport market share of 0.09 percent to project U.S. active aircraft prepared by the FAA. As shown in the table, this forecast

yields 217 based aircraft in 2025. An increasing share forecast of U.S. active aircraft was also considered. This is consistent with the historical trend at Hollister Municipal Airport which has increased its market share 0.02 percent since 1991. Applying an increasing share to forecast U.S. active aircraft yields 382 based aircraft at Hollister Municipal Airport in 2025.

TABLE 2E
Share of U.S. Active Aircraft

Year	U.S. Active Aircraft	Hollister Municipal Airport Based Aircraft	Percentage of U.S. Active Aircraft Based at Hollister
HISTORICAL			
1990	203,400	133	0.07%
1995	188,089	142	0.08%
2002	211,040	195	0.09%
FORECASTS			
Constant Share			
2005	215,490	193	0.09%
2010	223,720	201	0.09%
2015	227,600	207	0.09%
2020	233,300	212	0.09%
2025	238,900	217	0.09%
Increasing Share			
2005	215,490	237	0.11%
2010	223,720	268	0.12%
2015	227,600	296	0.13%
2020	233,300	350	0.15%
2025	238,900	382	0.16%

Source for historical and forecast U.S. active aircraft: FAA Aerospace Forecasts, selected years; FAA Long Range Forecasts.

A second technique examined historical based aircraft totals to residents in San Benito County. This forecasting technique examined historical based aircraft as a ratio of 1,000 residents. As shown in **Table 2F**, the 1990 ratio of based aircraft per 1,000 residents was 3.6. This ratio slightly decreased to 3.5 in 2002 as the local population growth outpaced based aircraft growth. Between 1990 and 2002, the San Benito County population grew at an average annual rate of 3.6 percent, while based aircraft grew at 3.2 percent.

TABLE 2F
Ratio of Based Aircraft to Population

Year	Hollister Based Aircraft	San Benito County Population	Based Aircraft Per 1,000 Residents
1990	133	36,697	3.6
1995	142	43,300	3.3
2002	195	55,921	3.5
Constant Ratio of Based Aircraft per 1,000 Residents			
2005	222	63,600	3.5
2010	251	72,000	3.5
2015	276	79,100	3.5
2020	303	86,800	3.5
2025	332	95,250	3.5
Increasing Ratio of Based Aircraft per 1,000 Residents			
2005	235	63,600	3.7
2010	281	72,000	3.9
2015	324	79,100	4.1
2020	373	86,800	4.3
2025	429	95,250	4.5

Source: Historical and Forecast population: California Department of Finance. Extrapolated by Coffman Associates.

Assuming a constant ratio of 3.5 aircraft per 1,000 residents yields 332 based aircraft in 2025. This results in based aircraft growing at the same rate as the County population. Assuming the ratio of based aircraft to 1,000 residents increases gradually throughout the planning period yields 429 based aircraft at Hollister Municipal Airport in 2025.

Based Aircraft Forecast Summary

A summary of all forecasts for based aircraft at Hollister Municipal Airport and the selected planning forecast are presented in **Table 2G.** As shown on **Exhibit 2C**, the combination of forecasts represents a "forecast envelope." The forecast envelope represents the area in which future based aircraft at Hollister Municipal Airport should be found. The constant share of U.S. aircraft represents the lower end of the planning envelope. The increasing ratio of aircraft per 1,000 residents represents the upper end of the forecast envelope. The FAA TAF is below and outside the planning envelope as it currently underestimates based aircraft; the CASP forecasts lies in the lower portion of the planning envelope.

TABLE 2G
Based Aircraft Forecast Summary

	FORECASTS					
	2002	**2005**	**2010**	**2015**	**2020**	**2025**
Share of U.S. Active Aircraft						
Constant Share		193	201	207	212	217
Increasing Share		237	268	296	350	382
Aircraft Per 1,000 Residents						
Constant Ratio		222	251	276	303	332
Increasing Ratio		235	281	324	373	429
Other Resources						
FAA TAF		145	145	145	N/A	N/A
1999 CASP		201	227	250	274	N/A
Selected Planning Forecast	195	205	240	285	330	380

In examining the forecasts, the constant share of U.S. active forecasts appears to be too conservative considering historical growth trends at the airport. This forecast only adds 21 aircraft through the panning period; 62 aircraft have been added in the past 12 years. The constant ratio of aircraft to 1,000 residents would also appear to be conservative; it only adds 137 new aircraft over a 23-year planning period. As noted above, many factors appear to support future strong growth in based aircraft demand for Hollister Municipal Airport. These include its airfield capabilities and capacity and its services in relation to nearby airports, and the potential transfer of aviation demand from the San Francisco Bay area.

As detailed in the airport service area analysis above, approximately 45 percent of the based aircraft at Hollister Municipal Airport are from aircraft owners in the Bay area counties (Santa Clara, Santa Cruz, San Mateo) with airports closer to their residents. While the Bay area population is expected to grow at an annual of rate of only 0.5 percent, the Bay area has a severe shortage of available and affordable hangar space. It can be expected that the amount of based aircraft at the airport from the San Francisco Bay area will increase as a result of affordable hangar space, less restrictive airspace, air traffic control environment, and lower levels of aircraft activity at Hollister Municipal Airport.

These factors, along with continued growth in San Benito County, suggest that planning at the higher end of the forecast envelope is appropriate for Hollister Municipal Airport. The selected planning forecast projects 380 based aircraft in 2025 with an evenly distributed gain of aircraft for each planning period. The selected planning forecast projects 185 new based aircraft at the airport by 2025. This equates to an average annual growth rate of 2.9 percent. Slower growth in the near term is projected as the focus on capital improvements related to security and maintenance and the City

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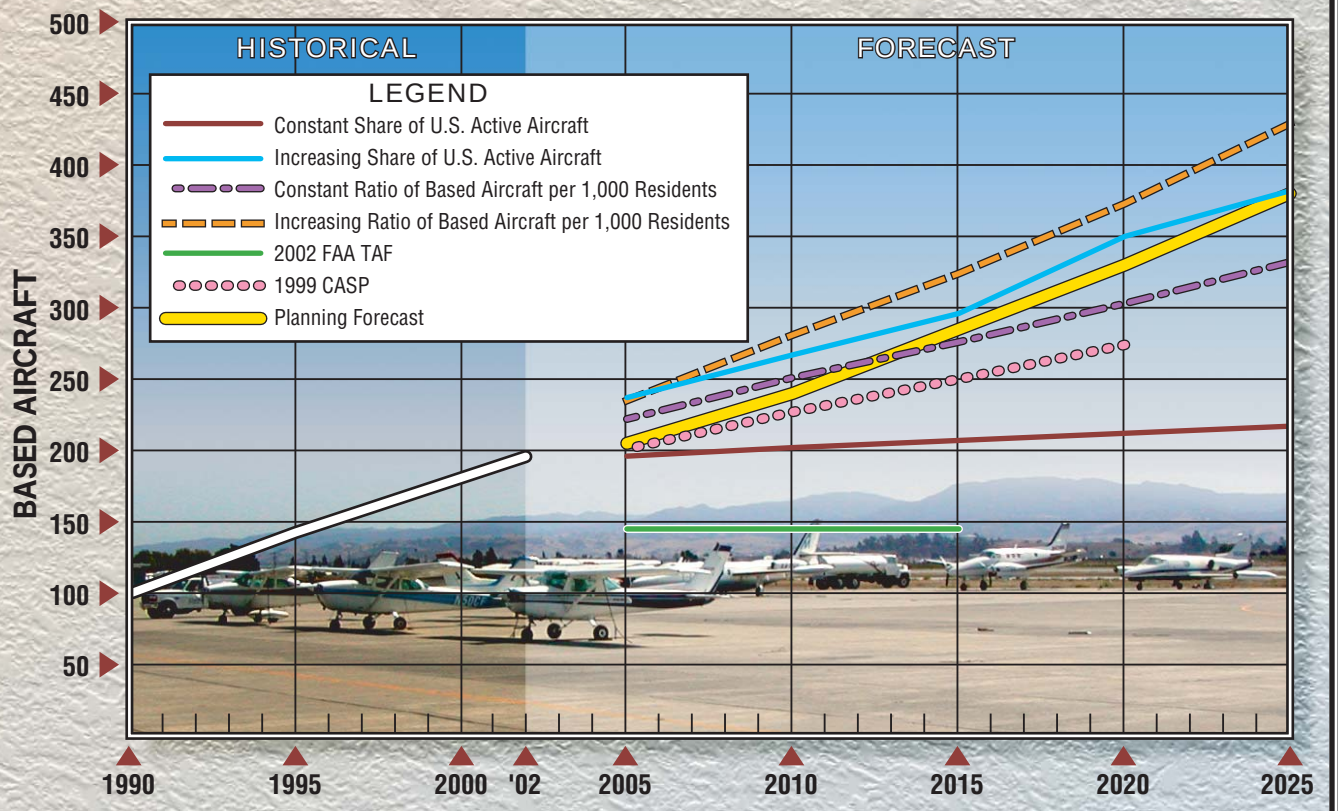
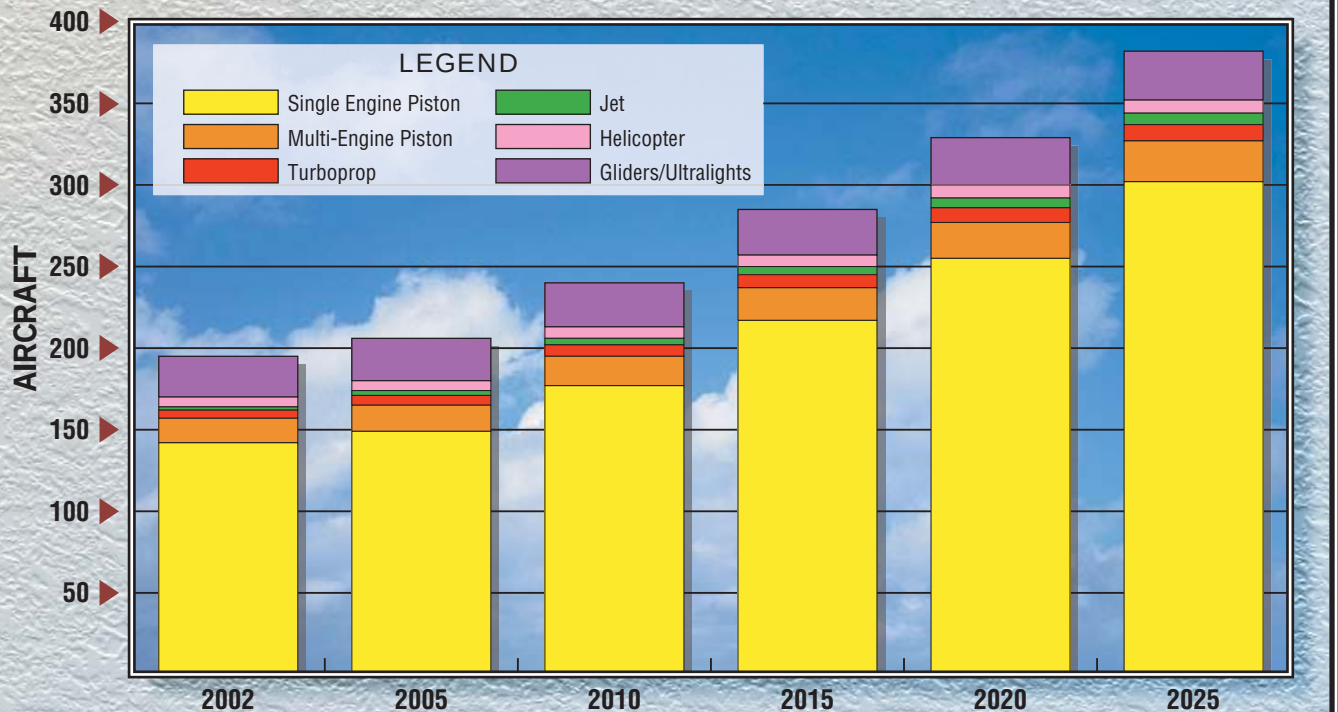
BASED AIRCRAFT



FLEET MIX



Hollister Municipal Airport

Exhibit 2C
BASED AIRCRAFT FORECASTS

addresses the sanitary sewer treatment issues to eliminate the moratorium on new development.

BASED AIRCRAFT FLEET MIX PROJECTION

Knowing the aircraft fleet mix expected to utilize the airport is necessary to properly plan facilities that will best serve the level of activity and the type of activities occurring at the airport. The existing based aircraft fleet mix is comprised mainly of single-engine piston aircraft, but also includes 15 multi-engine piston aircraft, five turboprop aircraft, two jet aircraft, six helicopters, and 25 gliders/ultralights.

Projections for the based aircraft fleet mix consider the expected use of Hollister Municipal Airport in the future. Strong growth in single-engine piston aircraft is projected for the airport. This is driven by relocation of based aircraft from Bay area residents seeking affordable and available hangars and tie-down space. Local economic and population growth will add new private aircraft ownership. The new regulations for sport aircraft should increase single-engine based aircraft levels as these aircraft will tend to be operated outside busy metropolitan areas with complicated airspace environments. The fleet mix projection in **Table 2H** includes the addition of 157 single-engine piston aircraft over the planning period. The airport is expected only to gain 10 multi-engine aircraft through the planning period. This is the result of the static levels of multi-engine aircraft projected nationally. An additional two helicopters and 10 gliders/ultralights are anticipated through the planning period. Glider growth is expected to outpace growth nationally as Hollister Municipal Airport is ideally situated for glider activities.

Consistent with national projections, the airport is expected to benefit from the growth of business and corporate aircraft use. The airport is expected to add five turboprops and five turbojets over the planning period. This will be supported by economic growth in the region and perhaps the basing of corporate aircraft from the Bay area. The 2003 *RASP* noted that a number of the local corporations have chosen to base their aircraft outside the Bay area for cost savings, accessibility, space and hangar availability, and other concerns such as safety. Presently, the airports of choice include Sacramento International, Fresno-Yosemite, and Modesto City-County Airport. Aircraft and crews fly from the base airport to the Bay area, pickup passengers, and fly to their destination. The aircraft returns to its base airport at the conclusion of the flights. The based aircraft fleet mix projection for Hollister Municipal Airport is summarized in **Table 2H** and **Exhibit 2C**.

TABLE 2H
Based Aircraft Fleet Mix

Year	Total	Single-Engine Piston	Multi-Engine Piston	Turboprop	Jet	Helicopter	Gliders
HISTORICAL							
2002	195	140	15	5	4	6	25
FORECAST							
2005	205	146	16	6	5	6	26
2010	240	174	18	7	7	7	27
2015	285	214	20	8	8	7	28
2020	330	253	22	9	9	8	29
2025	380	297	25	10	10	8	30

Source for historical data: Airport records.

ANNUAL OPERATIONS

There are two types of operations at an airport: local and itinerant. A local operation is a takeoff or landing performed by an aircraft that operates within sight of an airport, or which executes simulated approaches or touch-and-go operations at the airport. Itinerant operations are those performed by aircraft with a specific origin or destination away from the airport. Generally, local operations are characterized by training operations. Typically, itinerant operations increase with business and commercial use since business aircraft are used primarily to carry people from one location to another.

Due to an absence of an airport traffic control tower (ATCT), actual operation counts are not available for Hollister Municipal Airport. Instead, only estimates of operations are available. The most accurate estimate of aircraft activity has been compiled by CALTRANS, which completed an acoustical count of aircraft activity at the airport in the winter and summer of 2002. Based on their counts over two separate two-week periods, the airport was estimated by CALTRANS to accommodate 53,800 annual operations. This count was increased by 3,500 operations to account for glider operations at the airport resulting in 57,800 total operations.

For purposes of this forecasting effort, military operations are included within the general aviation forecasts due to their small number. Military operations consist mostly of itinerant helicopter operations.

At Hollister Municipal Airport, itinerant operations are estimated to repre-

sent a higher percentage of total annual operations than local operations. In 2002, itinerant operations were projected to account for 34,400 (or 60 percent) of the 57,300 total operations. Local operations represent the remaining 40 percent, or 22,900 operations.

Projections of annual operations are examined by the number of operations per based aircraft. Two forecasts of operations per based aircraft have been developed. First, a constant, or static, level of operations is applied to forecast based aircraft. Applying the 2002 ratio of 294 operations per based aircraft yields 111,700 total operations at Hollister Municipal Airport by 2025. This projection results in annual operations growing at the same rate as based aircraft.

The FAA projects general aviation activity to increase at an average annual rate of 1.2 percent per year through 2025. If this growth rate is applied to the operations per based aircraft ratio, it will increase the ratio to 388 by the end of the long term planning horizon. Applying this ratio to forecast based aircraft yields 147,400 annual general aviation operations by 2025.

Previous forecasts have been examined for comparative purposes and are summarized in **Table 2J** and on **Exhibit 2D**. The 2002 FAA TAF projects annual operations to remain static at an understated level of 53,000 through 2015. The 1999 CASP projects annual operations reaching 99,373 by 2020.

The FAA projects an increase in aircraft utilization and the number of general aviation hours flown nationally. This trend, along with projected growth in based aircraft, support future growth in annual operations at Hollister Municipal Airport. Considering these factors, the selected planning forecast for the airport projects the number of operations per based aircraft to gradually increase through the planning period, reaching 565 by 2025. Annual operations are, therefore, projected to grow to 129,600 by 2025.

PEAKING CHARACTERISTICS

Many airport facility needs are related to the levels of activity during peak periods. The periods used in developing facility requirements for this study are as follows:

- **Peak Month -** The calendar month when peak activity occurs.
- **Design Day -** The average day in a peak month. The indicator is easily derived by dividing the peak month activity by the number of days in the month.
- **Busy Day -** The busy day of a typical week in the peak month.
- **Design Hour -** The peak hour within the design day.

Without an airport traffic control tower, adequate operational information is not available to directly determine peak operational activity at the

airport. Therefore, peak period forecasts have been determined according to trends experienced at similar airports and by examining the operational counts completed at the airport in 2002.

TABLE 2J
General Aviation Operations

Year	Operations	Based Aircraft	Operations Per Based Aircraft
2002	57,300	195	294
Constant Ratio of Operations Per Based Aircraft			
2005	60,300	205	294
2010	70,600	240	294
2015	83,800	285	294
2020	97,000	330	294
2025	111,700	380	294
Increasing Ratio of Operations Per Based Aircraft			
2005	62,700	205	306
2010	78,200	240	326
2015	98,600	285	346
2020	120,800	330	366
2025	147,400	380	388

Typically, the peak month for activity at general aviation airports approximates 10 to 15 percent of the airport's annual operations. Without a significant level of training activity at Hollister Municipal Airport, the peak month is expected to remain at the lower end of the range and represent approximately 10 percent of annual operations. The forecast of busy day operations was calculated as 1.25 times design day activity. Design hour operations were estimated at 15 percent of design day operations. **Table 2K** summarizes peak operations forecasts for the airport.

COMMERCIAL AIR SERVICE POTENTIAL

Hollister Municipal Airport has never been served by scheduled airline service. If it had commercial air service, the airport would need to compete with air service at Monterey, San Jose, Oakland, and San Francisco. Monterey Peninsula Airport provides regular service to Los Angeles and San Francisco. San Jose and Oakland provide low-cost jet service to most west coast destinations and major national designations, with one-stop service to most destinations nationally. San

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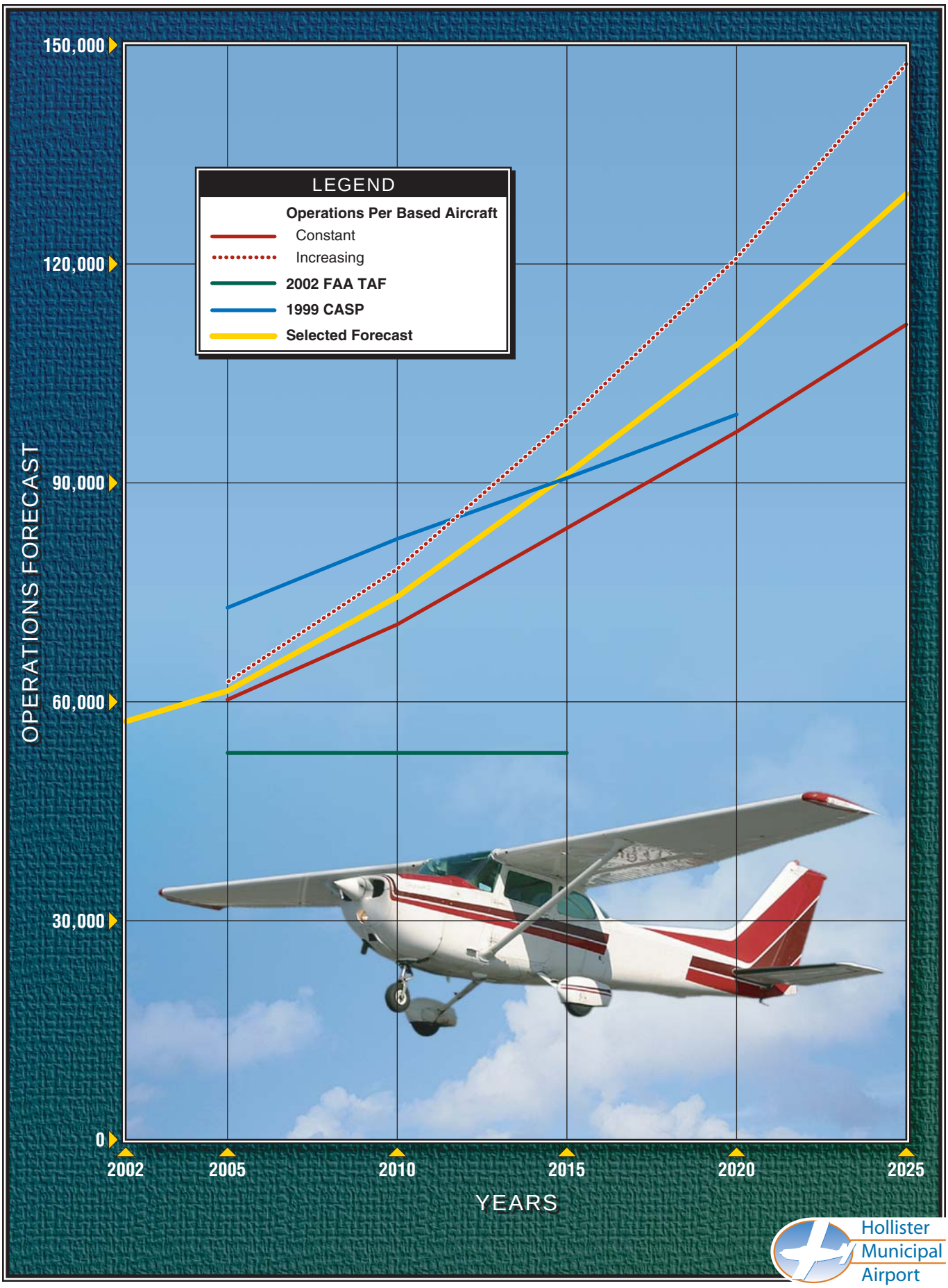


Hollister Municipal Airport

Exhibit 2D
ANNUAL OPERATIONS FORECASTS

Francisco provides both national and international service.

The schedules, aircraft type, and fares offered from these airports significantly limit the potential for airlines to provide service from Hollister Municipal Airport. If Hollister Municipal Airport would be expected to compete with these airports, Hollister Municipal Airport would need to provide similar levels of service to similar destinations. To support these services, Hollister Municipal Airport would need to have similar levels of passengers. With a significantly lower population base for the Hollister Municipal Airport service area, this may be unlikely. This causes Hollister to focus on commuter/regional service as a potential air service niche.

TABLE 2K
Annual Operations Forecast Summary

	2002	2005	2010	2015	2020	2025
Operations Per Based Aircraft						
Constant		60,300	70,600	83,800	97,000	111,700
Increasing		62,700	78,200	98,600	120,800	147,400
2002 FAA TAF		53,000	53,000	53,000	N/A	N/A
1999 CASP		72,898	82,327	90,669	99,373	N/A
Selected Planning Forecast	57,300	61,500	74,400	91,200	108,900	129,600

More specifically, this second opportunity would be to serve secondary markets not served by jet service at San Jose and Oakland, and only commuter air service at San Francisco. These markets would be limited to markets in California as smaller regional airline aircraft have profitable stage length limitations of less than 500 miles. This could include markets such as Bakersfield, Eureka, Fresno, Palm Springs, Redding, and Santa Barbara. To support at least two daily round trips to any of these destinations would require between 15,200 and 24,000 passengers annually for each destination. There is most likely not this level of passengers wanting to fly from Hollister to any of these destinations annually.

Table 2L summarizes all the commercial service airports in the State of California, along with their 2001 level of enplanements and 2001 population. As shown in the table, only one airport in the state, Jack McNamara in Crescent City, accommodates scheduled airline service with a County population below that of San Benito County. Scheduled airline service is most likely feasible in Crescent City considering its distance from major hub airports. The only other communities that support scheduled airline service with less than 200,000 residents are Imperial County and Redding. Redding is nearly three hours from Sacramento; Imperial County is only two hours from San Diego. San Diego draws significantly from the Imperial County passenger market.

TABLE 2L
Commercial Service Airports
State of California

Associated City	Airport Name	County	2001 County Population	2001 Enplanements
Arcata/Eureka	Arcata	Humboldt	126,832	97,480
Bakersfield	Meadows	Kern	378,317	127,006
Burbank	Burbank-Glendale-Pasadena	Los Angeles	9,665,243	2,250,685
Carlsbad	McClellan-Palomar	San Diego	2,871,061	73,173
Chico	Chico Municipal	Butte	206,566	25,858
Crescent City	Jack McNamara	Del Norte	27,633	12,108
Fresno	Fresno Yosemite International	Fresno	818,083	457,570
Imperial	Imperial County	Imperial	146,164	14,820
Inyokern	Inyokern	Kern	678,314	10,292
Long Beach	Long Beach (Daugherty)	Los Angeles	9,665,243	297,130
Los Angeles	Los Angeles International	Los Angeles	9,665,243	29,365,436
Merced	Merced Municipal/MacReady	Merced	219,727	3,456
Modesto	Modesto City-County-Harry Sham	Stanislaus	464,915	25,235
Monterey	Monterey Peninsula	Monterey	408,803	195,788
Oakland	Metropolitan Oakland International	Alameda	1,462,619	5,566,100
Ontario	Ontario International	San Bernardino	1,771,322	3,168,975
Oxnard	Oxnard	Ventura	772,849	35,534
Palm Springs	Palm Springs International	Riverside	461,006	586,028
Redding	Redding Municipal	Shasta	77,988	66,621
Sacramento	Sacramento International	Sacramento	638,204	4,021,102
San Diego	San Diego International-Lindbergh	San Diego	1,364,557	7,506,320
San Francisco	San Francisco International	San Francisco	714,093	16,475,611
San Jose	San Jose International	Santa Clara	1,072,259	5,981,440
San Luis Obispo	San Luis Obispo Co.-McChesney	San Luis Obispo	106,395	138,884
Santa Ana	John Wayne/Orange Co.	Orange	1,433,709	3,688,304
Santa Barbara	Santa Barbara Municipal	Santa Barbara	265,419	363,581
Santa Maria	Santa Maria Pub/Capt G Allan Hancock	Santa Barbara	265,419	35,038
Santa Rosa	Sonoma Co.	Sonoma	206,375	24,629
Stockton	Stockton Metropolitan	San Joaquin	292,062	19,651

Source: CEDDS, FAA

Another consideration is the availability of an airline to consider serving Hollister Municipal Airport. There are only four commuter/regional airlines in California. These airlines are affiliated with the major air carriers and are committed to feeding passengers to the major air carriers' hubs. These carriers are increasing the size of their aircraft to meet passenger expectations for comfort, speed, and jet reliability. The lack of competition between the commuter airlines and increasing size of their aircraft limit the potential to find a candidate to provide service at the airport.

Prior to accommodating scheduled air service, Hollister Municipal Airport would need to comply with Federal Aviation Regulation (FAR) Part 139, *Certification and Operations: Land Airports Serving Certain Air Carriers.* Hollister Municipal Airport is not now, or nor has never been certificated under FAR Part 139; therefore, at this

time, Hollister Municipal Airport cannot accommodate scheduled air carriers using aircraft with more than 9 passenger seats.

FAR Part 139 sets forth rules for a continuous self-inspection program of operations and maintenance by the airport owner, to ensure a safe operating environment for commercial air carrier aircraft. FAR Part 139 requires the development of an airport certification manual to describe how the airport would comply with the regulations and the details of the self-inspection program. These regulations specify that airport rescue and firefighting equipment and personnel be on hand during air carrier operations, and the development of an emergency plan. FAR Part 139 further specifies inspections of the air carrier operating areas, limiting vehicle and pedestrian access to the airfield and air carrier operating areas, the protection of navigational aids on the airport, and identification (or removal) of obstructions in the air space used by air carrier aircraft.

The initial cost to implement FAR Part 139 certification could range between $200,000 and $1,000,000, with annual recurring operational costs of more than $100,000. These initial costs assume the development of a suitable terminal to accommodate the security and operational needs of an airline, airfield improvements, and improvements to firefighting capacity. The recurring costs include the costs associated with Police and Fire support.

The Air Carrier Access Act of 1986 requires that an air carrier/commuter service airport either have loading bridges or equipment to assist the boarding of disabled passengers where level entry is not available. Hollister Municipal Airport is not equipped with loading bridges, nor does it have a disabled person lift. This arrangement would need to be met prior to initiating airline service at Hollister Municipal Airport.

Of special consideration with all scheduled airline activities are new requirements for passenger checked baggage and departure screening. Following the events of September 11, 2001, the federal government passed the *Aviation and Transportation Security Act*. This law created the Transportation Security Administration (TSA) to administer air transportation security. With this law, the TSA took responsibility for conducting check point passenger screening and was responsible for checked baggage screening. The law requires security screeners to be employees of the Federal government, except for a few limited situations when the airport can request contract security screeners funded by the TSA.

Therefore, prior to establishing any new scheduled airline service at Hollister Municipal Airport, the TSA must fund security screening at Hollister Municipal Airport. In 2003 and 2004, the TSA was reducing their security staff nationwide to meet congressionally mandated staffing size. Furthermore, the TSA was focusing

their capital funding requirements on the installation of in-line automated baggage screening devices at major airports, to meet explosive detection requirements of the law. Without the support of the TSA, scheduled airline service could not be established at Hollister Municipal Airport.

An airline's decision to enter a market is purely a business decision based on the potential passenger market. Attracting scheduled air service to Hollister would require a considerable commitment on the part of the City of Hollister. Necessary airport improvements would include a terminal facility, terminal apron, and auto parking. In addition, the City of Hollister would likely need to provide marketing and/or subsidies to attract scheduled air service to Hollister. New security requirements would need to be implemented, as well as safety certification for the airport, which would require dedicated airport rescue and firefighting equipment. The cost to maintain safety certification with the FAA could be more than $100,000 annually.

Considering the current economic state of the national airline industry, proximity to large hub airports, and expected limited passenger market for Hollister Municipal Airport, it is not expected that there is a potential for scheduled airline service at Hollister Municipal Airport. Therefore, the master plan will not consider the establishment of commercial airline service at Hollister Municipal Airport at any time during the planning period. For this master plan, Hollister Municipal Airport will be assumed to remain a general aviation airport through the planning period of this master plan.

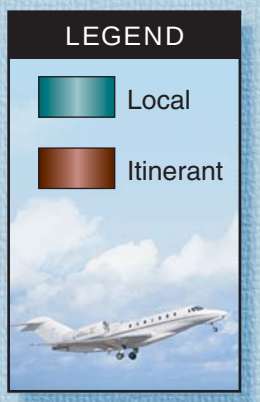
SUMMARY

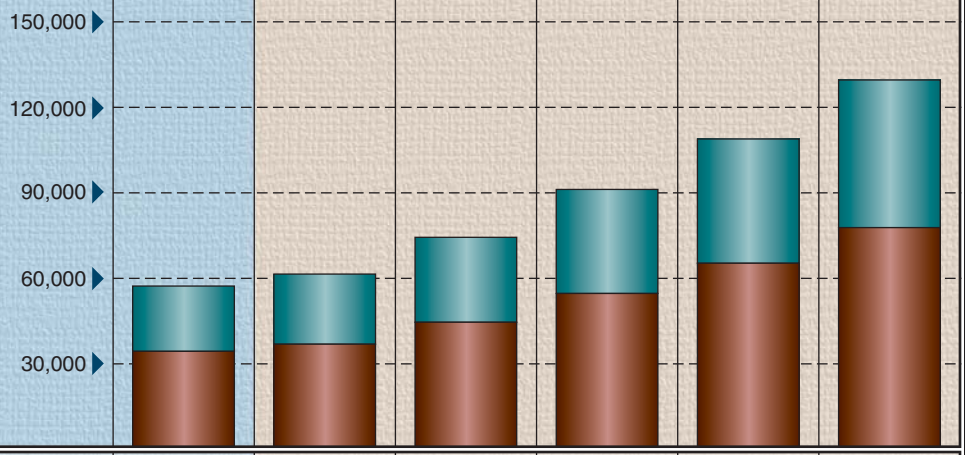
This chapter has outlined the various aviation demand levels anticipated through the year 2025 at Hollister Municipal Airport. Long term growth at the airport will be influenced by many factors including the local economy, the need for a viable aviation facility in the immediate area, trends in general aviation at the national level, and the transfer of aviation demand from the Bay area. A summary of the forecasts aviation activity levels for Hollister Municipal Airport is summarized on **Exhibit 2E**.

The next step in the master planning process will be to assess the capacity of existing facilities, their ability to meet forecast demand, and to identify changes to the airfield and/or landside facilities which will create a more functional aviation facility.

SUMMARY OF AVIATION ACTIVITY

CATEGORY	Historical 2002	Forecasts 2005	2010	2015	2020	2025
ANNUAL OPERATIONS						
Itinerant	34,000	36,900	44,600	54,700	65,300	77,800
Local	22,900	24,600	29,800	36,500	43,600	51,800
Total Annual Operations	***56,900***	***61,500***	***74,400***	***91,200***	***108,900***	***129,600***
BASED AIRCRAFT						
Single Engine Piston	140	146	174	214	253	297
Multi-engine Piston	15	16	18	20	22	25
Turboprop	5	6	7	8	9	10
Jet	4	5	7	8	9	10
Helicopter	6	6	7	7	8	8
Other	25	26	27	28	29	30
Total Based Aircraft	***195***	***205***	***240***	***285***	***330***	***380***





Hollister Municipal Airport

Exhibit 2E
FORECAST SUMMARY